EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 11176829
PUBLICATION DATE : 02-07-99

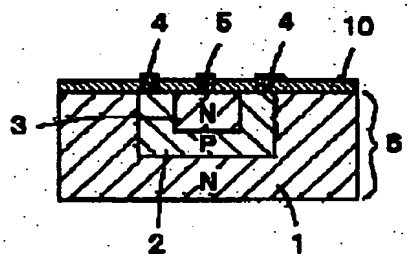
APPLICATION DATE : 11-12-97
APPLICATION NUMBER : 09362153

APPLICANT : INNOTECH CORP;

INVENTOR : IWAMOTO KAZUYOSHI;

INT.CL. : H01L 21/316 H01L 21/768

TITLE : SEMICONDUCTOR OXIDE FILM AND FORMING METHOD THEREFOR



ABSTRACT : PROBLEM TO BE SOLVED: To lower the dielectric constant to a degree where the response to ultra-high speed processing is possible and also to obtain physically stable oxide film for a semiconductor by forming a semiconductor oxide film from porous SiO_2.

SOLUTION: An oxide film 10 for a semiconductor is a film made of porous SiO_2. That is, there are many voids in the oxide film 10, so that its dielectric constant is low compared to ordinary SiO_2 film and is almost half the dielectric constant of the conventional oxide film. That is, by using this oxide film 10, a delay through wiring can be made almost to one-half. This kind of oxide film for semiconductor is made from SiH_4 gas and H_2O_2, water as raw materials and is formed by a thermal CVD method in the range of 100°C to 400°C for example. Moreover, as the raw materials for a CVD, if high polymer alcohol having a molecular weight larger than that of H_2O is supplied together with SiH_4 gas and H_2O_2 water, then the voids can be made larger.